CLAIMS

1. An information processing server that communicates with a terminal device connected to a first network and is connected to a second network different from the first network, comprising:

a tunnel setter configured to set a tunnel with the terminal device;

a reception unit configured to receive a broadcast or multicast packet output from one or more service providing servers on the first network, via the tunnel;

a server finding unit configured to find service providing servers on the first network and services provided by the service providing servers, based on the received broadcasts or multicast packets;

a notification unit configured to notify the terminal device of the services found, via the tunnel or the second network; and

a data communication unit configured to be responsive to an execution request of the service from the terminal device via the tunnel or the second network to conduct data communication concerning the service with a service providing server providing the service via the second network.

2. The information processing server according to claim 1, wherein the data communication unit transmits a result of the data communication via the tunnel or the second network to the terminal device.

3. The information processing server according to claim 1, wherein the notification unit notifies the terminal device of identifiers of the service providing servers found by the server finding unit via the tunnel or the second network,

upon receiving an execution request of the service provided by the service providing server having the identifier, the data communication unit conducts data communication concerning the service with the service providing server having

the identifier.

4. The information processing server according to claim 3, wherein

the service finding unit finds a contents providing server as the service providing server,

the notification unit notifies the terminal device of identifiers of contents provided by the contents providing server via the tunnel or the second network, and

upon being requested to provide contents having the identifier from the terminal device via the tunnel or the second network, the data communication unit acquires the contents having the identifier from the contents providing server via the second network and transmits the acquired contents to the terminal device via the tunnel or the second network.

5. The information processing server according to claim 4, wherein the data communication unit acquires still picture data, video data, voice data or document data as the contents.

6. The information processing server according to claim 1, wherein

the service finding unit finds an image output apparatus as the service providing server, and

the data communication unit transmits data transmitted from the terminal device via the tunnel or the second network to the image output apparatus via the second network.

7. The information processing server according to claim 6, wherein the image output apparatus is a printer.

8. The information processing server according to claim 1, wherein the server finding unit transmits a broadcast or multicast packet for finding service providing servers on the first network via the tunnel to cause the terminal device to flow the broadcast or multicast packet onto the first network, receives

response packets to the transmitted broadcast or multicast packet via the tunnel, and finds service providing servers on the first network and services provided by the service providing servers, on the basis of the received response packets.

9. The information processing server according to claim 8, further comprising an IP address acquisition unit configured to acquire an IP address of the first network, wherein

a DHCP (Dynamic Host Configuration Protocol) server is connected to the first network,

the IP address acquisition unit acquires the IP address of the first network by communicating with the DHCP server via the tunnel, and

the server finding unit uses the acquired IP address as an address of a transmission source of the broadcast or multicast packet to be transmitted to the terminal device.

10. The information processing server according to claim 1, wherein the tunnel setter sets the tunnel by using L2TP(Layer 2 Tunneling Protocol), PPTP(Point-to-Point Tunneling Protocol) or MPLS(Multi-Protocol Label Switching).

11. A remote control system including a terminal device connected to a first network and an information processing server connected to a second network, wherein

the terminal device comprises:

a first tunnel setter configured to set a tunnel with the information processing server; and

a transfer unit configured to receive a broadcast or multicast packet output from one or more service providing servers on the first network and transmits the received broadcast or multicast packets to the information processing server via the tunnel, and

the information processing server comprises:

a second tunnel setter configured to set the tunnel with the terminal device;

a reception unit configured to receive the broadcast or multicast packets from the terminal device via the tunnel;

a server finding unit configured to find service providing servers on the first network and services provided by the service providing servers, based on the received broadcast or multicast packets;

a notification unit configured to notify the terminal device of the services found, via the tunnel or the second network; and

a data communication unit configured to be responsive to an execution request of the service from the terminal device via the tunnel or the second network to conduct data communication concerning the service with a service providing server providing the service via the second network.

12. The remote control system according to claim 11, wherein the data communication unit transmits a result of the data communication to the terminal device via the tunnel or the second network.

13. The remote control system according to claim 11, wherein the notification unit notifies the terminal device of identifiers of the service providing servers found by the server finding unit via the tunnel or the second network, and

upon receiving an execution request of the service provided by the service providing server having the identifier, the data communication unit conducts data communication concerning the service with the service providing server having the identifier.

14. The remote control system according to claim 11, wherein

the server finding unit in the information processing server transmits a broadcast or multicast packet for finding service providing servers on the first network to the terminal device via the tunnel,

the transfer unit in the terminal device outputs the

broadcast or multicast packet received from the server finding unit, onto the first network, receives response packets to the output broadcast or multicast packet, and transmits the received response packets to the server finding unit via the tunnel, and

the server finding unit finds service providing servers on the first network and service provided by the service providing servers, on the basis of the response packets received from the transfer unit.

15. The remote control system according to claim 14, wherein

a DHCP server is connected to the first network,

the information processing server further comprises an IP address acquisition unit configured to acquire an IP address of the first network by communicating with the DHCP server via the tunnel, and

the server finding unit uses the IP address acquired by the IP address acquisition unit as an address of a transmission source of the broadcast or multicast packet to be transmitted to the terminal device.

16. The remote control system according to claim 11, wherein the first and second tunnel setters set the tunnel by using L2TP, PPTP or MPLS.

17. A remote control method using a terminal device connected to a first network and an information processing server connected to a second network, comprising:

setting a tunnel between the terminal device and the information processing server;

transmitting a broadcast or multicast packet output from one or more service providing servers on the first network to the information processing server via the tunnel to cause the information processing server to find the service providing servers and services provided by the service providing servers;

notifying the terminal device of the services found, from the information processing server via the tunnel or the second network; and

if execution request of the service is received by the information processing server from the terminal device via the tunnel or the second network, conducting data communication concerning the service between a service providing server providing the service and the information processing server, via the second network.

18. The remote control method according to claim 17, further comprising transmitting a result of the data communication from the information processing server to the terminal device via the tunnel or the second network.

19. The remote control method according to claim 17, further comprising;

notifying the terminal device of identifiers of the service providing servers via the tunnel or the second network from the information processing server, and

if execution request of the service provided by the service providing server having the identifier is received by the information processing server, conducting data communication concerning the service between the service providing server having the identifier and the information processing server.